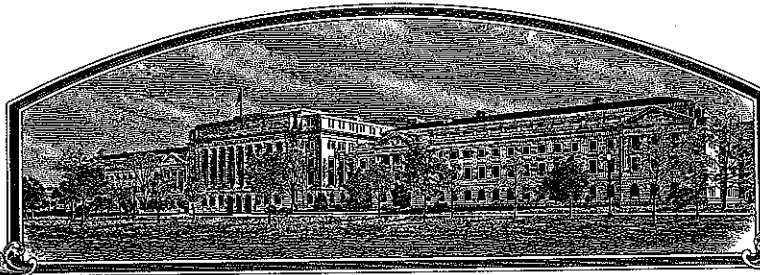


No.

200500090



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Paragon Seed, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

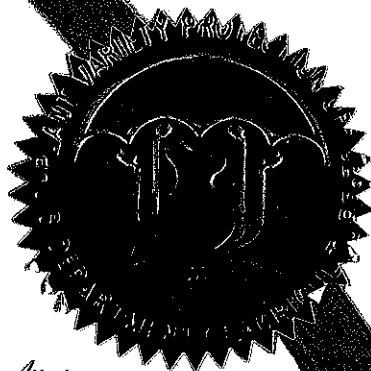
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

LETTUCE

'Flagstaff'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this sixth day of September, in the year two thousand and six.

Attest:

[Signature]
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

[Signature]
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER <div style="text-align: center;">Paragon Seed, Inc.</div>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME <div style="text-align: center;">Exp. 5911</div>		3. VARIETY NAME <div style="text-align: center;">Flagstaff</div>	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) <div style="display: flex; justify-content: space-between;"> <div>507 Abbott Street Salinas, Ca. 93901</div> <div>P.O. Box 1906 Salinas, Ca. 93902-1906</div> </div>		5. TELEPHONE (include area code) <div style="text-align: center;">831.753.2100</div>		<div style="border: 1px solid black; padding: 5px; text-align: center;"> FOR OFFICIAL USE ONLY </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> PVPO NUMBER <div style="font-size: 1.5em; font-weight: bold;">200500090</div> </div>	
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) <div style="text-align: center;">Corporation</div>		8. IF INCORPORATED, GIVE STATE OF INCORPORATION <div style="text-align: center;">California</div>		9. DATE OF INCORPORATION <div style="text-align: center;">March 07, 1994</div>	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) <div style="text-align: center;"> Victor Heintzberger, President Paragon Seed, Inc. P.O. Box 1906 Salinas, California 93902-1906 </div>				<div style="border: 1px solid black; padding: 5px;"> FILING AND EXAMINATION FEES: <div style="font-size: 1.2em;">\$ 3652.00</div> </div> <div style="border: 1px solid black; padding: 5px;"> DATE 1-18-2005 </div> <div style="border: 1px solid black; padding: 5px;"> CERTIFICATION FEE: <div style="font-size: 1.2em;">\$ 768 -</div> </div> <div style="border: 1px solid black; padding: 5px;"> DATE 8/4/2006 </div>	
11. TELEPHONE (Include area code) <div style="text-align: center;">831.753.2100</div>	12. FAX (Include area code) <div style="text-align: center;">831.753.1470</div>	13. E-MAIL <div style="text-align: center;">vic@paragonseed.com</div>		14. CROP KIND (Common Name) <div style="text-align: center;">Lettuce</div>	
15. GENUS AND SPECIES NAME OF CROP <div style="text-align: center;">Lactuca sativa L.</div>		16. FAMILY NAME (Botanical) <div style="text-align: center;">Compositae</div>		17. IS THE VARIETY A FIRST GENERATION HYBRID? <div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO </div>	
18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) <div style="font-size: 0.8em;"> a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,705), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office) </div>			19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act <div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input checked="" type="checkbox"/> NO (If "no", go to item 22) </div>		
20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED			21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? IF YES, SPECIFY THE <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED NUMBER 1,2,3, etc. <small>(If additional explanation is necessary, please use the space indicated on the reverse.)</small>		
22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES First sale 08/05/04 IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)			23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <div style="font-size: 0.8em;"> 7/9/06 <input checked="" type="checkbox"/> YES Darkland Cos PV # 9000137 5/29/1992 USA <input type="checkbox"/> NO </div> IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)		
24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF OWNER <div style="font-size: 1.5em; font-family: cursive;">Victor Heintzberger</div>			SIGNATURE OF OWNER 		
NAME (Please print or type) <div style="text-align: center;">Victor Heintzberger</div>			NAME (Please print or type) 		
CAPACITY OR TITLE <div style="text-align: center;">President</div>		DATE <div style="text-align: center;">January 14, 2005</div>		CAPACITY OR TITLE 	
DATE 		DATE 			

Exhibit A

Breeding History Flagstaff

The objective of this breeding project was to develop a dark green romaine lettuce variety with corky root rot resistance. The most popular "dark" type romaine Darkland Cos is susceptible to the Corky Root Rot disease, which makes the variety difficult to produce in coastal soils infected with the pathogen.

Given the parameters of the ideal plant, Darkland Cos (Central Valley Seeds) was selected as the female for the cross for its dark green leaf color. Seed color of Darkland Cos is white (silver). Clemente (Seminis) was selected as the pollen parent for its bolt tolerance and resistance to Corky Root Rot disease (cor cor gene). Seed color of Clemente is white (silver).

1997

In August of 1997, the Cross of Darkland Cos x Clemente was made near Corcoran, California. The cross was designated 23C2.

On November 12, 1997, F₁ seeds were germinated in Petrie dishes and later transplanted into one-gallon pots in a greenhouse near Salinas, California. The plants were grown to maturity and harvested in April of 1998 under the following designations:

<u>I.D.</u>	<u>Stake</u>	<u>F2 Designation</u>	<u>Harvest</u>	<u>Seed Color</u>
23C2	91	23C2-1	04/08	White
23C2	92	dead	n/a	n/a
23C2	93	23C2-2	04/13	White
23C2	94	23C2-3	04/08	White
23C2	95	23C2-4	04/08	White
23C2	96	23C2-5	04/08	White
23C2	97	23C2-6	04/08	White
23C2	98	23C2-7	04/08	White

1998

In May of 1998 seeds of the following lines were germinated in planting flats. At the cotyledon stage, seedlings were inoculated with a mixture of downy mildew spores randomly collected from infected lettuce plants from the Salinas Valley.

(Leaves infected with Downy Mildew were collected from various areas of the Salinas Valley of California. The infected areas with active lesions were misted to run-off and the mildew spores were captured in a supernatant solution.)

Exhibit A**Breeding History Flagstaff**

Approximately twelve days from inoculation, the plants were observed for disease symptoms. Plants with sporulation were removed and destroyed. *(At the time of inoculation, no known downy mildew resistance genes were identified in the two parental lines. All crosses by Paragon Seed, Inc. are routinely screened for "field resistance" to lettuce downy mildew.)* The remaining healthy plants were transplanted into the Paragon Seed, Inc. research seed production field near Corcoran, California.

The following lines were downy mildew indexed, transplanted, and harvested in the fall of 1998 as follows:

<u>I.D.</u>	<u>Downy Mildew Susceptible/total</u>	<u>Harvest</u>
23C2 - 1	0/14	1 - 11 white seed
23C2 - 2	0/14	1 - 9 white seed
23C2 - 3	1/13	1 - 9 white seed
23C2 - 4	0/14	1 - 7 white seed
23C2 - 5	0/14	1 - 10 white seed
23C2 - 6	1/14	1 - 13 white seed

1999

The first trial planted with the 23C2 lines above was planted on July 1, 1999 in the Salinas Valley of California and evaluated in early September. In this trial the line 23C2-5-9 was noted to have individual plants with desired characteristics, yet was segregating for corky root resistance, leaf color and height.

Concurrent with the field trials in the Salinas Valley, the breeding line 23C2-5-9 was being increased near Corcoran, California. Selections of this line were made in August of 1999 as follows:

<u>I.D.</u>	<u>Seed Color</u>
23C2-5-9-1	white seed
23C2-5-9-2	white seed

Trials of the two selections were conducted in the fall of 1999 near Yuma, Arizona and in the Imperial Valley of California. For desert production, the 23C2-5-9-1 selection appeared to have a darker green leaf reflectance, better uniformity to type, less tendency to cup, and less leaf blistering in periods where night temperatures were low enough for freezing of plant tissue. In the romaine germplasm, there appears to be levels of genetic variability in susceptibility to leaf blistering due to freezing temperatures.

Exhibit A

Breeding History Flagstaff

2000

The 23C2-5-9-1 line was trialed extensively in the Salinas Valley of California during the year 2000 production cycle. This selection performed exceptionally well in trials, the dark leaf color appeared uniform, no tipburn was noted, and plants were open at market maturity, showing little tendency for cupping. All lines were continually screened for Corky Root Rot resistance.

Note: The tendency for the expanding internal leaves of the romaine plant to curve and close in over the heart, or growing point, is a desirable characteristic for romaine "hearts." For processing and fresh market, it is desirable for the leaves to remain open and not close or "cup" over the heart of the plant.

Seed of the 23C2-5-9-1 line was harvested in August of 200 as follows:

<u>I.D.</u>		<u>Seed Color</u>
23C2-5-9-1-	1	ws
	2	ws
	3	ws
	4	ws
	5	ws
	Balance	ws

The "2000" selections were evaluated in trials planted in Yuma, Arizona during the fall, winter, and spring of 2000-2001. The 1-1 line was tall in stature, dark green in color with an open heading characteristic. Mid ribs were smooth, absent the small epidermal hairs noted on the abaxial leaf surface of other breeding lines and commercial varieties.

Note: The "s" gene refers to the hairless stem and midrib, recessive to trichomes on leaf ribs and stems as described by Durst, 1930 and Ernst-Schwarzenbach, 1936. Ryder (1971) noted that a lettuce breeding line segregated for none, few, or many epidermal hairs on the abaxial leaf surface. The allele for leaf hairs was recessive, but dominance was incomplete under some conditions. The allele was named *leaf hairs* and symbolized *lh*.

Based on the excellent performance of the selections in the desert trials, a small mass increase of the 23C2-5-9-1 lines was scheduled for production in the 2001 seed crop. The group appeared better adapted for winter production against Darkland Cos, and not as well adapted for fall or late spring production. Early fall trials showed a tendency for bolting, as did late spring trials. Selected lines were also increased and harvested separate and apart from the mass increase to evaluate for tipburn, corky root resistance, cupping, non-spiny leaf surface, and dark leaf surface reflectance.

Exhibit A**Breeding History Flagstaff****2001**

In the 2001 seed crop, a small (5 pound) mass increase was produced of "23C2-591" for breeder trials. The crop was planted in April and harvested in August. The 23C2-5-9-1-1 line was also increased and harvested as follows:

<u>I.D.</u>	<u>Selection</u>	<u>Seed Color</u>
23C2-5-9-1-1-	1	white seed
23C2-5-9-1-1-	2	white seed
23C2-5-9-1-1-	3	white seed
23C2-5-9-1-1-	4	white seed
23C2-5-9-1-1-	5	white seed
23C2-5-9-1-1-	Balance	white seed

In Salinas Valley trials, 23C2-5-9-1-1 and 23C2-5-9-1-4 were noted to be resistant to Corky Root Rot. Selections -2, -3, and 5 were discarded, as they did not meet the levels of resistance of -1 and -4. In our fall, winter and spring trials in Yuma, Arizona the "23C2-591" composite production lacked the uniformity desirable for commercial production and was dropped from the program in the spring of 2002.

2002

23C2-5-9-1-1 and 23C2-5-9-1-1-4 were increased in our seed production near Corcoran, California.

In the 2002 seed crop the following lines were harvested:

<u>I.D.</u>	<u>Selection</u>	<u>Seed Color</u>
23C2-5-9-1-1-1-	1	white seed
23C2-5-9-1-1-1-	2	white seed
23C2-5-9-1-1-1-	3	white seed
23C2-5-9-1-1-1-	4	white seed
23C2-5-5-1-1-1-	5	white seed
23C2-5-9-1-1-1-	Balance	white seed

Exhibit A**Breeding History Flagstaff**

I.D.	Selection	Seed Color
23C2-5-9-1-1-4-	1	white seed
23C2-5-9-1-1-4-	2	white seed
23C2-5-9-1-1-4-	3	white seed
23C2-5-9-1-1-4-	4	white seed
23C2-5-9-1-1-4-	5	white seed
23C2-5-9-1-1-4-	Balance	white seed

These two lines were very uniform for dark color, were resistant to Corky Root Rot, showed excellent tolerance to tipburn, and were larger and more vigorous than Darkland Cos. The parental lines performed well in trials in the Salinas Valley and in Yuma, Arizona. In the late summer Salinas Valley trials, the 23C2-5-9-1-1 line exhibited better uniformity to plant type, taller height, a brilliant yellow internal color, darker green external color, slower bolting and less cupping than the -4 group.

It was based on these observations that an experimental seed crop using the -1-1-1 group as stock seed should be produced in 2003.

2003

In 2003, the first experimental seed crop of "Exp. 5911" was produced near Corcoran, California. Stock seed of the first crop was a composite of the individual selection 23C2-5-9-1-1-1-1 and 23C2-5-9-1-1-1-Bal. Trials in the Salinas Valley of California and near Yuma, Arizona confirmed uniformity to type, color, and growth habit consistent with the desired plant type.

2004

The second crop of "Exp. 5911" was planted on May 14 and harvested on September 16 near Corcoran, California. Growers viewed commercial trials in the Salinas Valley of California and Yuma, Arizona favorably. Exp. 5911 was carefully rogued in 2003 and 2004 and found to be uniform to type meeting all commercially acceptable standards. No off types or variants were noted in two years of commercial production.

Flagstaff was developed using five generations of single plant selections and one generation of mass selection.

Flagstaff has been observed for two years of reproduction and during the seed increase period and is stable and uniform.

Exhibit B**Statement of Distinctness Flagstaff**

Flagstaff originated from a hand pollinated cross and was developed to provide lettuce growers with a dark green romaine lettuce variety that is bolt tolerant, tipburn tolerant, and resistant to Corky Root Rot.

Flagstaff most closely resembles the variety Darkland Cos, however, Flagstaff has the (cor cor) gene for Corky Root resistance; Darkland Cos does not contain this gene.

Note: Corky Root (CR) is caused by the bacterium Rhizomonas suberfaciens (gen.nov., sp.nov.) (van Bruggen et al., 1990). This resistance is conferred by a single recessive gene (cor cor) (Brown and Michelmore, 1988)

Flagstaff and Darkland Cos have smooth midribs (lh allele), whereas, Parris Island Cos has leaf hairs present on the midribs.

NOTE : Darkland Cos originated as a single plant selection from the variety Parris Island Cos. The allele for leaf hairs is recessive; however dominance is incomplete under some conditions. The allele was named leaf hairs and symbolized lh by Ryder (1971).

The leaf color of Flagstaff is 137B, whereas the Leaf color of Darkland Cos is 146A. The leaf color of Parris Island Cos is 143A.

Note: Leaf color measurements were made in the Salinas Valley of California, (Higashi Farms, October 2004) and have been verified by measurements taken in Yuma, Arizona (Pasquinelli Farms, Wellton, Arizona, November, 2004).

REPRODUCE LOCALLY. Include form number and date on all reproductions.

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**U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705**

Exhibit C

**OBJECTIVE DESCRIPTION OF VARIETY
Lettuce (*Lactuca sativa* L.)**

NAME OF APPLICANT (S) Paragon Seed, Inc.	TEMPORARY OR EXPERIMENTAL DESIGNATION Exp. 5911	VARIETY NAME Flagstaff
ADDRESS (Street and No. or RD No., City, State, Zip Code, and Country) 507 Abbott Street Salinas, California 93901		FOR OFFICIAL USE ONLY PVPO NUMBER 200500090
P.O. Box 1906 Salinas, Ca. 93902		

Place the appropriate number that describes the varietal character in the boxes below. Place a zero in the first box (e.g. or) when number is either 99 or less or 9 or less. Measured data should be the mean of an appropriate number (at least 20) of well space plants. Royal Horticultural Society or any recognized color standard may be used to determine plant colors.

The Location of the Test Area is: Salinas, California Color System Used: Royal Horticultural Society

SPECIFIC VARIETIES USED FOR COMPARISON AS CHECK VARIETIES IN THIS APPLICATION: Use standard regional check varieties, which are adapted to your area. One of the comparison varieties must be the most similar variety used in Exhibit B.

Application Variety (a1) Flagstaff Most Similar Variety (c1) Darkland Cos

Standard Regional Check Variety (c2) Parris Island Cos

1. PLANT TYPE: (See List of Suggested Check Varieties on Page 8)

01 = Cutting/Leaf
02 = Butterhead
03 = Bibb

04 = Cos or Romaine
05 = Great Lakes Group
06 = Vanguard Group

07 = Salinas Group
08 = Eastern (Ithaca) Group
09 = Stem

10 = Latin
11 = Other (Specify) _____

(a1)

(c1)

(c2)

2. SEED:

(a1) } **COLOR**
(c1) } 1 = White (Silver Gray)
(c2) } 2 = Black (Grey Brown)
3 = Brown (Amber)

(a1) } **LIGHT DORMANCY**
(c1) } 1 = Light Required
(c2) } 2 = Light Not Required

(a1) } **HEAT DORMANCY**
(c1) } 1 = Susceptible
(c2) } 2 = Not Susceptible

3. COTYLEDON TO FOURTH LEAF STAGE: NOTE: Provide a color photograph or photocopy of the fourth leaf from 20 day-old seedling grown under optimal conditions.

SHAPE OF COTYLEDONS: 1 = Broad 2 = Intermediate 3 = Spatulate

(a1)

(c1)

(c2)

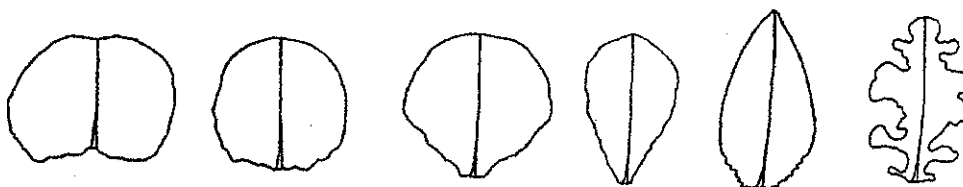
SHAPE OF FOURTH LEAF:

(a1)

(c1)

(c2)

3. COTYLEDON TO FOURTH LEAF STAGE: (continued)



1. 2. 3. 4. 5. 6.

LENGTH/WIDTH INDEX OF FOURTH LEAF: L/W x 10

(a1) (c1) (c2)

APICAL MARGIN:

1 = Entire
2 = Crenate/Gnawed
3 = Finely Dentate

4 = Moderately Dentate
5 = Coarsely Dentate
6 = Incised

7 = Lobed
8 = Other (Specify)

Lacerate

(a1) (c1) (c2)

BASAL MARGIN: (Use the options for Apical Margin above)

(a1) (c1) (c2)

UNDULATION:

1 = Flat

2 = Slight

3 = Medium

4 = Marked

(a1) (c1) (c2)

GREEN COLOR:

1 = Yellow Green
2 = Light Green

3 = Medium Green
4 = Dark Green

5 = Blue Green
6 = Silver Green

7 = Grey Green

(a1) (c1) (c2)

ANTHOCYANIN:

DISTRIBUTION:

1 = Absent
2 = Margin Only

3 = Spotted
4 = Throughout

5 = Other (Specify)

(a1) (c1) (c2)

CONCENTRATION:

1 = Light

2 = Moderate

3 = Intense

(a1) (c1) (c2)

ROLLING:

1 = Absent

2 = Present

(a1) (c1) (c2)

CUPPING:

1 = Uncupped

2 = Slight

3 = Markedly

(a1) (c1) (c2)

REFLEXING:

1 = None

2 = Apical Margin

3 = Lateral Margins

(a1) (c1) (c2)

4. MATURE LEAVES (Observe Harvest-Mature Outer Leaves)

NOTE: Provide color photo of a harvest-mature leaf which accurately shows color and margin characteristics.

MARGIN:**INCISION DEPTH:**
(deepest penetration
of the margin)

1 = Absent/Shallow (Dark Green Boston)

2 = Moderate (Vanguard)

3 = Deep (Great Lakes 659)

(a1)

2

(c1)

2

(c2)

2

INDENTATION: (Finest divisions of the margin)

1 = Entire (Dark Green Boston)

4 = Crenate (Vanguard)

2 = Shallowly Dentate (Great Lakes 65)

5 = Other (Specify) _____

3 = Deeply Dentate (Great Lakes 659)

(a1)

2

(c1)

2

(c2)

2

**UNDULATIONS OF THE
APICAL MARGIN:**

1 = Absent/Slight (Dark Green Boston) 2 = Moderate (Vanguard)

3 = Strong (Great Lakes 659)

(a1)

1

(c1)

1

(c2)

1

GREEN COLOR:

1 = Very Light Green (Bibb)

3 = Medium Green (Great Lakes)

5 = Very Dark Green

2 = Light Green (Minetto)

4 = Dark Green (Vanguard)

6 = Other (Specify) _____

(a1)

4

(c1)

4

(c2)

4

ANTHOCYANIN:**DISTRIBUTION:**

1 = Absent

3 = Spotted (California Cream Butter)

5 = Other (Specify) _____

2 = Margin Only (Big Boston)

4 = Throughout (Prize Head)

(a1)

1

(c1)

1

(c2)

1

CONCENTRATION:

1 = Light (Iceberg)

2 = Moderate (Prize Head)

3 = Intense (Ruby)

(a1)

1

(c1)

1

(c2)

1

SIZE:

1 = Small

2 = Medium

3 = Large

(a1)

3

(c1)

2

(c2)

3

GLOSSINESS:

1 = Dull (Vanguard)

2 = Moderate (Salinas)

3 = Glossy (Great Lakes)

(a1)

0 2

(c1)

0 2

(c2)

0 2

BLISTERING:1 = Absent/Slight
(Salinas)2 = Moderate
(Vanguard)3 = Strong
(Prize Head)

(a1)

0 2

(c1)

0 2

(c2)

0 2

LEAF THICKNESS:

1 = Thin

2 = Intermediate

3 = Thick

(a1)

0 3

(c1)

0 3

(c2)

0 2

TRICHOMES:

1 = Absent (Smooth)

2 = Present (Spiny)

(a1)

0 1

(c1)

0 1

(c2)

0 2

5. PLANT:**SPREAD OF FRAME LEAVES:**

(a1)

3 6 cm

(c1)

3 5 cm

(c2)

3 2 cm

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5. PLANT: (continued)

HEAD DIAMETER: (Market Trimmed with Single Cap Leaf)

(a1) cm(c1) cm(c2) cm

HEAD SHAPE:

1 = Flattened

3 = Spherical

5 = Non-Heading

2 = Slightly Flattened

4 = Elongate

6 = Other (Specify)

Romaine

(a1) (c1) (c2)

HEAD SIZE CLASS:

1 = Small

2 = Medium

3 = Large

(a1) (c1) (c2)

HEAD PER CARTON:

(a1) (c1) (c2)

HEAD WEIGHT:

(a1) g.(c1) g.(c2) g.

HEAD FIRMNESS:

1 = Loose

2 = Moderate

3 = Firm

4 = Very Firm

(a1) (c1) (c2)

6. BUTT:

SHAPE:

1 = Slightly Concave

2 = Flat

3 = Rounded

(a1) (c1) (c2)

MIDRIB:

1 = Flattened (Salinas)

2 = Moderately Raised

3 = Prominently Raised (Great Lakes 659)

(a1) (c1) (c2)

7. CORE:

RC Farms Williams Ranch, Gonzales, Ca. June 21, 2004

DIAMETER AT BASE OF HEAD:

(a1) mm(c1) mm(c2) mm

RATIO OF HEAD DIAMETER/CORE DIAMETER:

(a1) (c1) (c2)

CORE HEIGHT FROM BASE OF HEAD TO APEX:

(a1) mm(c1) mm(c2) mm8. BOLTING: (Give First Water Date: 04/19/04) NOTE: First Water Date is the date seed first receives adequate moisture to germinate. This can and often does equal the planting date.

NUMBER OF DAYS FROM FIRST WATER DATE TO SEED STALK EMERGENCE: (summer conditions)

(a1) (c1) (c2)

BOLTING CLASS:

1 = Very Slow

3 = Medium

5 = Very Rapid

2 = Slow

4 = Rapid

(a1) (c1) (c2)

HEIGHT OF MATURE SEED STALK:

(a1) cm(c1) cm(c2) cm

8. BOLTING: (continued)

200500090

SPREAD OF BOLTER PLANT: (At widest point)

(a1) cm(c1) cm(c2) cm

BOLTER LEAVES:

1 = Straight

2 = Curved

(a1) (c1) (c2)

MARGIN:

1 = Entire 2 = Dentate

(a1) (c1) (c2)

COLOR:

1 = Light Green 2 = Medium Green 3 = Dark Green

(a1) (c1) (c2)

BOLTER HABIT:

TERMINAL INFLORESCENCE: 1 = Absent

2 = Present

(a1) (c1) (c2)

LATERAL SHOOTS:

1 = Absent

2 = Present

(a1) (c1) (c2)

BASAL SIDE SHOOTS:

1 = Absent

2 = Present

(a1) (c1) (c2)

9. MATURITY: (earliness of harvest-mature head formation)

NOTE: Complete this section for at least one season.

Darkland Cos

Parris Island Cos

SEASON	APPLICATION VARIETY			MOST SIMILAR VARIETY			STANDARD REGIONAL CHECK VARIETY		
	No. of Days ¹			No. of Days ¹			No. of Days ¹		
Spring	0	8	6	0	8	6	0	8	4
Summer	0	6	6	0	6	5	0	6	4
Fall	0	6	4	0	6	3	0	6	2
Winter	1	0	2	1	0	2	1	0	1

¹ First Water Date to Harvest

Give Planting Date(s) and Location(s):

Spring: San Ardo, California Plant 01/30/04 Harvest 04/26/04

Summer: Gonzales, California Plant 04/16/04 Harvest 06/21/04

Fall: Pajaro, California Plant 08/06/04 Harvest 10/09/04

Winter: Dome Valley, Arizona Plant 12/03/03 Harvest 03/15/04

10. ADAPTATION:

PRIMARY REGIONS OF ADAPTATION (tested and proven adapted):

0 = Not Tested 1 = Not Adapted 2 = Adapted

 Southwest (CA and/or AZ desert) West Coast Northeast North Central Southeast Other (Specify) _____

12

10. ADAPTATION: (Continued)

200500090

SEASON:

☐ 2 Spring (Area Salinas, Santa Maria) ☐ 2 Fall (Area Salinas, Santa Maria, CA.)
☐ 2 Summer (Area Salinas, Santa Maria) ☐ 2 Winter (Area Yuma, Az. / Imperial Valley, CA.)

☐ 0 GREENHOUSE: 0 = Not Tested 1 = Not Adapted 2 = Adapted
☐ 3 SOIL TYPE: 1 = Mineral 2 = Organic 3 = Both

11. VIRAL DISEASES:

1 = Immune 3 = Resistant 5 = Moderately Resistant/Moderately Susceptible 7 = Susceptible 9 = Highly Susceptible

Big Vein	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Lettuce Mosaic	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Cucumber Mosaic	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Tomato Bushy Stunt, cause of dieback	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Turnip Mosaic	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Beet Western Yellows	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Lettuce Infectious Yellows	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Other (Specify) _____	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>

12. FUNGAL/BACTERIAL DISEASES:

1 = Immune 3 = Resistant 5 = Moderately Resistant/Moderately Susceptible 7 = Susceptible 9 = Highly Susceptible

Corky Root Rot (Races: _____)	(a1)	<input type="checkbox"/> 3	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Downy Mildew (Races: _____)	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Powdery Mildew	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Sclerotinia Drop	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Bacterial Soft Rot (<i>Pseudomonas</i> spp. and others)	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Botrytis (Grey Mold)	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Verticillium Wilt	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Bacterial Leaf Spot	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Anthrachnose	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Other (Specify) _____	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>

13. INSECTS:

1 = Immune 3 = Resistant 5 = Moderately Resistant/Moderately Susceptible 7 = Susceptible 9 = Highly Susceptible

Cabbage Loopers	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Root Aphids	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Green Peach Aphid	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Lettuce Aphid	(a1)	<input type="checkbox"/> 7	(c1)	<input type="checkbox"/> 7	(c2)	<input type="checkbox"/> 7
Pea Leafminer	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Other (Specify) _____	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>

14. PHYSIOLOGICAL STRESSES:

1 = Immune	3 = Resistant	5 = Moderately Resistant/Moderately Susceptible	7 = Susceptible	9 = Highly Susceptible
Tipburn	(a1) <input type="text" value="7"/>	(c1) <input type="text" value="7"/>	(c2) <input type="text" value="7"/>	
Heat	(a1) <input type="text" value="5"/>	(c1) <input type="text" value="5"/>	(c2) <input type="text" value="7"/>	
Drought	(a1) <input type="text" value="7"/>	(c1) <input type="text" value="7"/>	(c2) <input type="text" value="7"/>	
Cold	(a1) <input type="text" value="5"/>	(c1) <input type="text" value="7"/>	(c2) <input type="text" value="5"/>	
Salt	(a1) <input type="text" value="7"/>	(c1) <input type="text" value="7"/>	(c2) <input type="text" value="7"/>	
Brown Rib (Rib Discoloration, Rib Blight)	(a1) <input type="text"/>	(c1) <input type="text"/>	(c2) <input type="text"/>	
Other (Specify) _____	(a1) <input type="text"/>	(c1) <input type="text"/>	(c2) <input type="text"/>	

15. POST HARVEST STRESS:

1 = Immune	3 = Resistant	5 = Moderately Resistant/Moderately Susceptible	7 = Susceptible	9 = Highly Susceptible
Pink Rib	(a1) <input type="text" value="7"/>	(c1) <input type="text" value="7"/>	(c2) <input type="text" value="7"/>	
Russet Spotting	(a1) <input type="text" value="7"/>	(c1) <input type="text" value="7"/>	(c2) <input type="text" value="7"/>	
Rusty Brown Discoloration	(a1) <input type="text" value="1"/>	(c1) <input type="text" value="1"/>	(c2) <input type="text" value="1"/>	
Internal Rib Necrosis (Blackheart, Grey Rib, Grey Streak)	(a1) <input type="text"/>	(c1) <input type="text"/>	(c2) <input type="text"/>	
Brown Stain	(a1) <input type="text"/>	(c1) <input type="text"/>	(c2) <input type="text"/>	

16. BIOCHEMICAL OR ELECTROPHORETIC MARKERS:**17. COMMENTS:**

Rusty Brown Discoloration is found only in the iceberg lettuce variety Climax, or crosses (segregating) which have Climax in the parentage.

SUGGESTED CHECK VARIETIES

200500090

TYPE	CHECK VARIETY
1 Cutting/Leaf	Waldmann's Green
2 Butterhead	Dark Green Boston
3 Bibb	Bibb
4 Cos or Romain	Parris Island
5 Great Lakes Group	Great Lakes 659-700
6 Vanguard Group	Vanguard
7 Salinas Group	Salinas
8 Eastern Group	Ithaca
9 Stem	Celtuce
10 Latin	Little Gem

REFERENCES

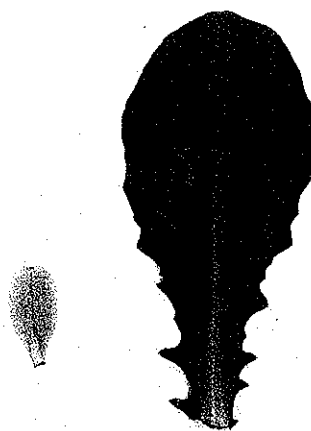
- Bowring, J.D.C., 1969, "The Identification of Varieties of Lettuce (*Lactuca Sativa* L.)". Journal of the National Institute of Agricultural Botany 11:499-520. National Institute of Agricultural Botany, Cambridge, UK.
- Davis, R.M., K.V. Subbarao, R.N. Rald, and E.A. Kurtz, 1997. "Compendium of Lettuce Diseases". APS Press, St. Paul, MN.
- Michelmore, R.W., J. M. Norwood, D.S. Ingram, I.R. Crute and P. Nicholson. 1984. "The inheritance of virulence in *Bremia lactucae* to match resistance factors 3, 4, 5, 6, 8, 9, 10, and 11 in lettuce (*Lactuca sativa*)". Plant Pathology 32:176-177.
- Norwood, J.M., R.W. Michelmore, I.R. Crute and D.S. Ingram. 1983. "The inheritance of specific virulence of *Bremia lactucae* (Downy Mildew) to match R-factors 1, 2, 4, 6, and 11 in lettuce (*Lactuca sativa*)". Plant Pathology 32:176-177.
- Rodenburg, C.M., et al., 1960. "Varieties of Lettuce. An International Monograph", Instituut voor de Verdeling van Tuinbouwgewassen (IVT), Wageningen, NL.
- Ryder, E.J., 1999, *Lettuce, Endive, and Chicory*, CABI Publications, Wallingford, UK.

Exhibit C Flagstaff

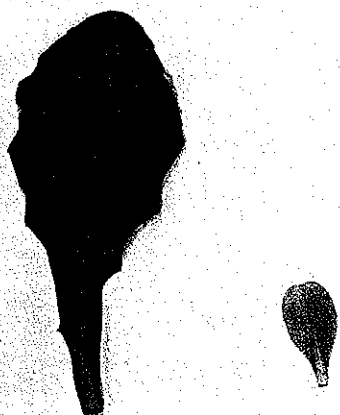
Photocopy of the fourth leaf from 20 day-old seedlings grown under optimal conditions



FLAGSTAFF



DARKLAND COS



PARRIS ISLAND COS



KINGPIN

Exhibit C Flagstaff

Photocopy of the fourth leaf from 20 day-old seedlings grown under optimal conditions



FLAGSTAFF



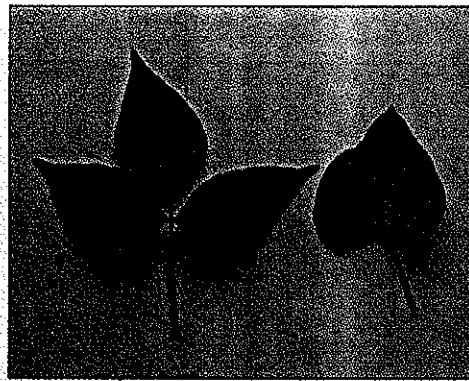
DARKLAND COS



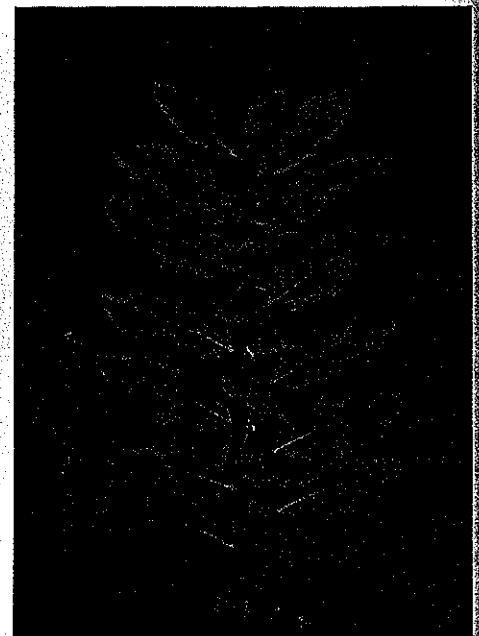
PARRIS ISLAND COS



KINGPIN



(a)



(b)

FIGURE 6.9

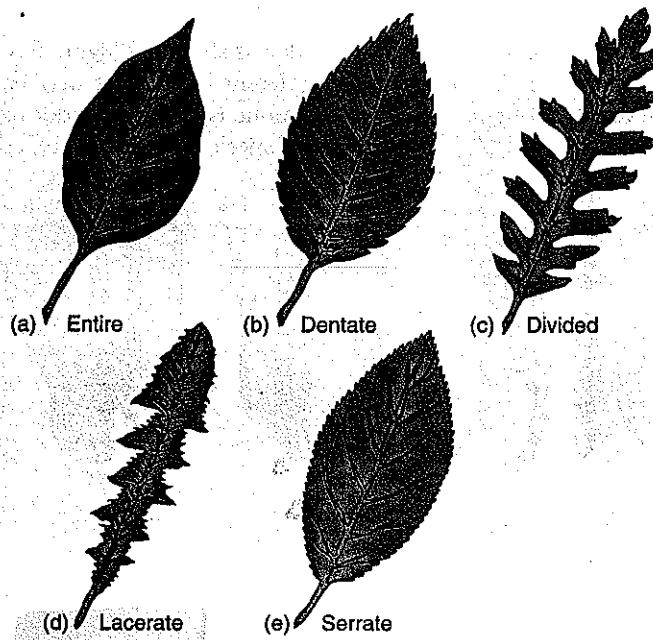
(a) Beans have two types of leaves: the very first leaf formed by the seedling is simple (right), but all later leaves are compound (left).

(b) This *Azara lanceolata* shoot has two types of leaves: Some leaves are large, whereas those closest to the axillary buds are small.

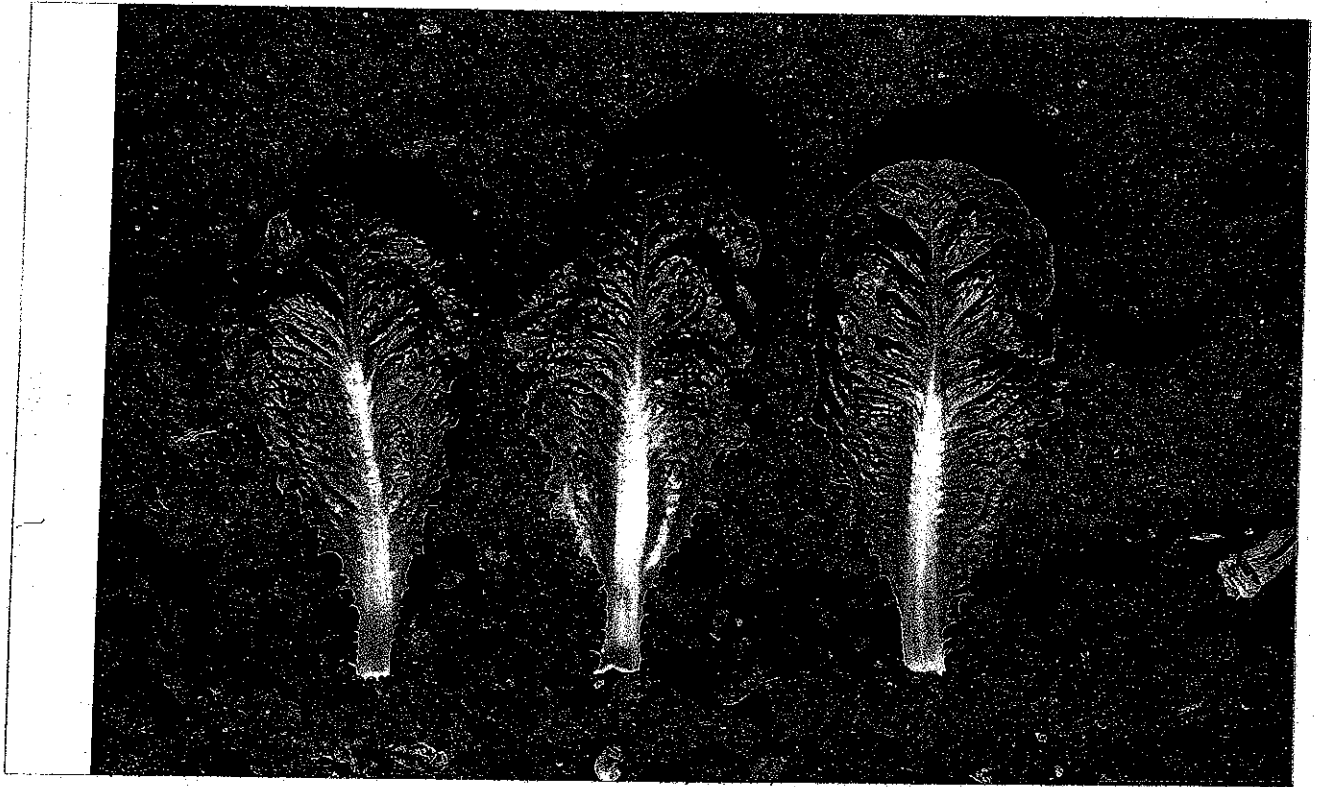
In species such as ivy or citrus, the transition from juvenile foliage to adult leaves does not take place until the plant is old enough to flower, perhaps more than 10 years old.

of leaves (Fig. 6.9a). In the simplest cases, the first few leaves of a seedling are distinctly different from all leaves produced later; if they were merely smaller, it could be argued that the seedling does not have enough stored energy resources to construct the large leaves that a mature plant can afford. But very often the juvenile leaves differ from the adult leaves not only in size but also shape, texture, and even simple versus compound structure. It seems reasonable to hypothesize that juvenile leaves of seedlings are adaptive in the microhabitat close to the soil surface where a seedling is located, whereas adult leaves are adapted to the more aerial microhabitat inhabited by an older, larger plant.

Other species produce two types of leaves simultaneously (Fig. 6.9b), often one type on long shoots and the other on short spur shoots. In cacti, the spines are short-shoot

**FIGURE 6.10**

Several common types of leaf margins; in nature, hundreds of types exist, many being intermediate between two or among several other types.



Darkland Cos

Flagstaff

Kingpin

Exhibit C: Color Photograph of harvest-mature leaf which accurately shows color and leaf margin characteristics

EXHIBIT C**Summary of Measurements****Flagstaff vs Darkland Cos**

Height (Cm's)	Flagstaff	Darkland Cos	Confidence Level %
RC Farms Gonzales, Ca. 06/21/04	767	750	99.8
Bengard Ranch Chualar, Ca. 09/09/04	749	721	100
Hayes Ranch Watsonville, Ca. 10/08/04	768	709	100

Core Diameter (Mm's)	Flagstaff	Darkland Cos	Confidence Level %
RC Farms Gonzales, Ca. 06/21/04	45.5	45.9	97.6
Bengard Ranch Chualar, Ca. 09/09/04	45.1	45.5	94.4
Hayes Ranch Watsonville, Ca. 10/08/04	46.0	47.0	99.9

EXHIBIT C

Summary of Measurements

Flagstaff vs Darkland Cos

Weight (Gm's)	Flagstaff	Darkland Cos	Confidence Level %
RC Farms Gonzales, Ca. 06/21/04	764	778	96.9
Bengard Ranch Chualar, Ca. 09/09/04	748	764	99.3
Hayes Ranch Watsonville, Ca. 10/08/04	746	773	98.8

Core Height (In's)	Flagstaff	Darkland Cos	Confidence Level %
RC Farms Gonzales, Ca. 06/21/04	2.1	1.9	99.6
Bengard Ranch Chualar, Ca. 09/09/04	2.0	1.8	99.7
Hayes Ranch Watsonville, Ca. 10/08/04	1.8	1.7	95.9

EXHIBIT C**Summary of Measurements****Flagstaff vs Paris Island Cos**

Height (Cm's)	Flagstaff	Parris Island Cos	Confidence Level %
Martella Ranch Salinas, Ca. 06/03/04	28.8	30.3	100
RC Farms Gonzales, Ca. 06/21/04	31.9	32.4	96.9
Bengard Ranch Chualar, Ca. 09/09/04	31.2	32.0	99.9
Jefferson Ranch Salinas, Ca. 09/24/04	33.1	33.8	95.0
Hayes Ranch Watsonville, Ca. 10/08/04	32.0	33.1	100

Core Diameter (Mm's)	Flagstaff	Parris Island Cos	Confidence Level %
Martella Ranch Salinas, Ca. 06/03/04	44.1	43.1	99.9
RC Farms Gonzales, Ca. 06/21/04	45.5	45.1	90.4
Bengard Ranch Chualar, Ca. 09/09/04	45.1	44.8	96.3
Jefferson Ranch Salinas, Ca. 09/24/04	46.9	46.0	99.7
Hayes Ranch Watsonville, Ca. 10/08/04	46.0	44.4	100

EXHIBIT C**Summary of Measurements****Flagstaff vs Paris Island Cos**

Weight (Gm's)	Flagstaff	Parris Island Cos	Confidence Level %
Martella Ranch Salinas, Ca. 06/03/04	740	713	99.9
RC Farms Gonzales, Ca. 06/21/04	763	744	99.9
Bengard Ranch Chualar, Ca. 09/09/04	748	726	99.9
Jefferson Ranch Salinas, Ca. 09/24/04	756	740	95.0
Hayes Ranch Watsonville, Ca. 10/08/04	746	682	99.9

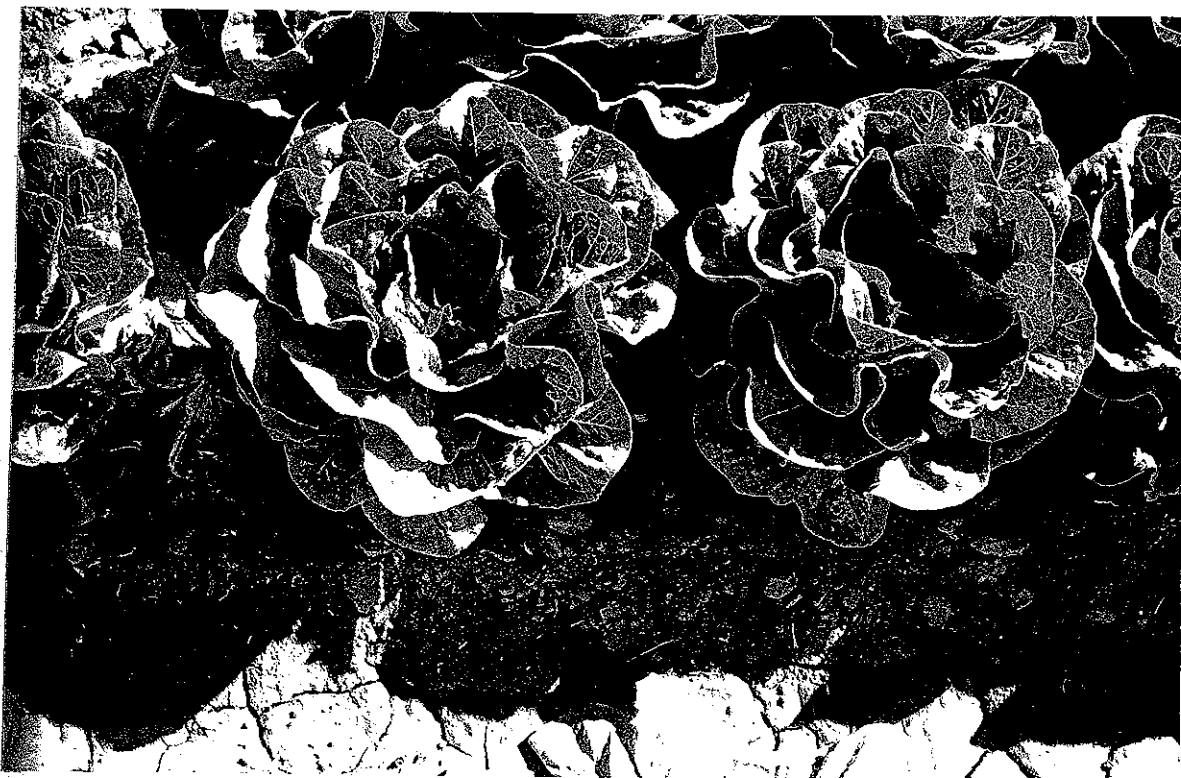
Core Height (In's)	Flagstaff	Parris Island Cos	Confidence Level %
Martella Ranch Salinas, Ca. 06/03/04	1.5	1.6	99.0
RC Farms Gonzales, Ca. 06/21/04	2.1	2.3	99.4
Bengard Ranch Chualar, Ca. 09/09/04	2.0	2.1	93.7
Jefferson Ranch Salinas, Ca. 09/24/04	2.0	2.2	98.8
Hayes Ranch Watsonville, Ca. 10/08/04	1.8	2.0	99.8



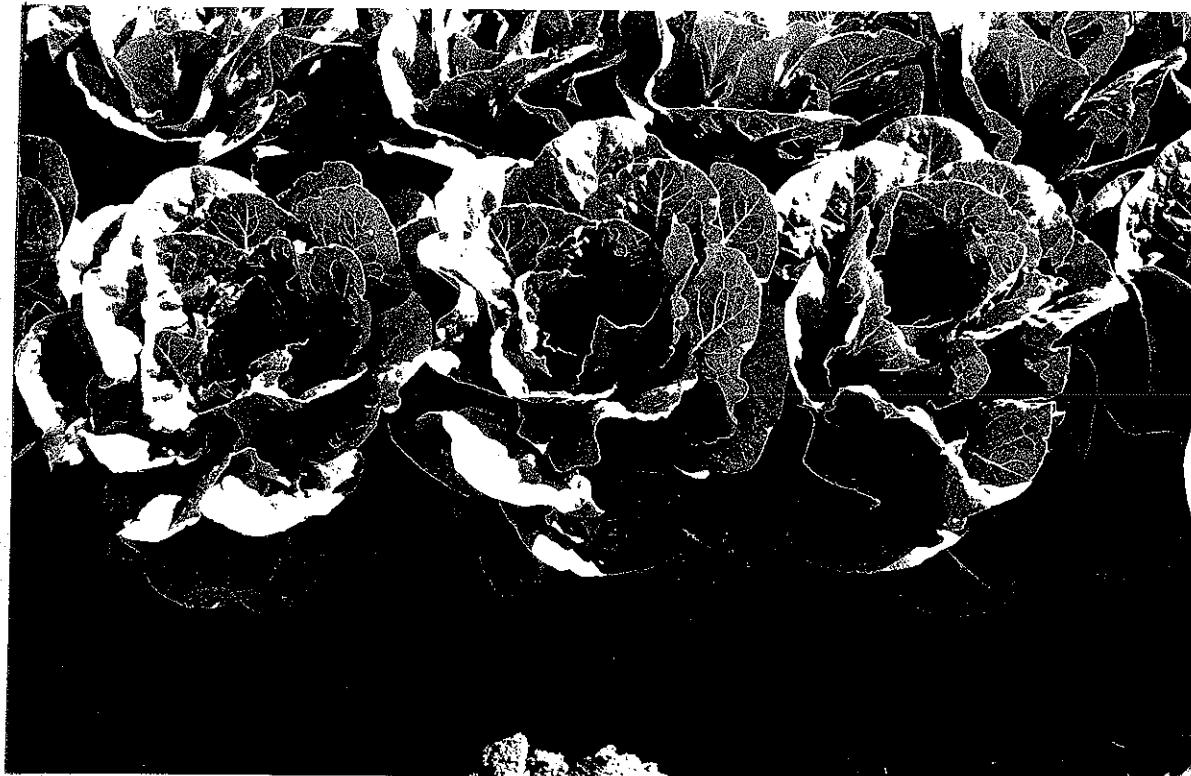
From Right to Left 1 bed Parris Island Cos 2 beds Triple Threat 1 bed Kingpin (Exp. 1752)
8 beds Flagstaff field Green Forest



Left to Right 1 bed Parris Island Cos 2 beds Triple Threat 1 bed Kingpin Flagstaff (Exp. 5911)



Parris Island Cos



Flagstaff (Exp 5911)



Parris Island Cos (Field)

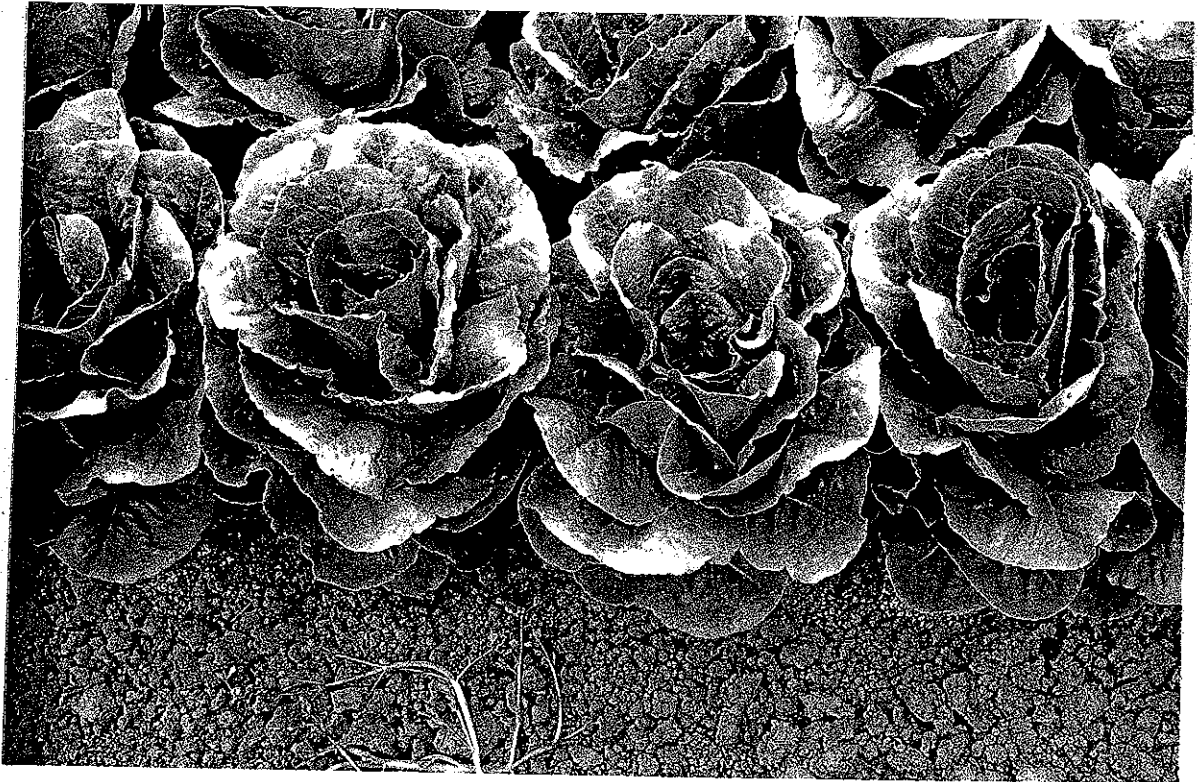
Flagstaff

Kingpin

Field



Flagstaff



Parris Island Cos



Flagstaff



Bushy Stunt Screening Trial 1=Darkland Cos 2=Flagstaff 3=Kingpin 4=Triple Threat



Kingpin



5911

2

Bushy Stunt Screening Trial

2=Flagstaff



Darkland Cos

1 = Darkland Cos

200500090

Exhibit C

Photocopy of mature leaf of Parris Island Cos showing trichomes on abaxial leaf surface



Exhibit C

Photocopy of mature leaf of Parris Island Cos showing trichomes on abaxial leaf surface



PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Flagstaff vs Darkland Cos**Martella Farming Orcutt Ranch Salinas, California****Harvest Date June 03, 2004**

	Flagstaff	Parris	Flagstaff	Parris	Flagstaff	Parris	Flagstaff	Parris
	Is Cos	Is Cos	Is Cos	Is Cos	Is Cos	Is Cos	Is Cos	Is Cos
	Height	Height	Core Dia	Core Dia	Weight	Weight	Core Ht	Core Ht
Count	24	24	24	24	24	24	24	24
Sum	692.9	728.0	1,059.0	1,035.0	17,760.0	17,135.0	36.00	39.50
Mean	28.87	30.33	44.13	43.13	740.00	713.96	1.50	1.65
Maximum Value	30.0	32.0	45.0	44.0	775.0	760.0	1.75	2.00
Minimum Value	28.0	29.0	43.0	42.0	720.0	675.0	1.25	1.25
Variance	0.40	0.58	0.64	0.46	250.00	536.91	0.01	0.06
Std.Dev	0.63	0.76	0.80	0.68	15.81	23.17	0.07	0.25
Joint Variance	*****	0.49	*****	0.55	*****	393.46	*****	0.04
Jt Deg of Freedom	*****	46	*****	46	*****	46	*****	46.00
t-Test Parameter	*****	7.239	*****	4.676	*****	4.548	*****	2.70
Level of Significance	*****	.0000	*****	.0000	*****	.0000	*****	.0098
Confidence Level %	*****	100.000	*****	99.997	*****	99.996	*****	99.02
	Cm's	Cm's	mm	mm	Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	29.0	30.0	45.0	44.0	750	725	1.50	2.00
	29.5	31.0	44.0	43.0	725	740	1.50	2.00
	30.0	29.5	43.0	42.0	760	675	1.50	1.75
Solidity measured on a scale of 1 to 5	29.5	30.0	45.0	44.0	740	700	1.50	1.75
	29.0	30.0	44.0	43.0	740	700	1.50	1.50
	29.0	29.5	43.0	42.0	720	680	1.50	1.50
	28.4	29.0	44.0	43.0	740	675	1.50	1.50
	29.0	29.0	45.0	43.0	725	700	1.50	1.50
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	30.0	30.0	45.0	43.0	750	700	1.50	1.50
	29.0	31.0	44.0	43.0	760	725	1.75	2.00
	28.5	30.0	44.0	43.0	720	720	1.50	2.00
	29.0	30.0	43.0	42.0	730	700	1.50	1.50
	28.0	30.0	45.0	43.0	725	730	1.50	2.00
	29.0	31.0	44.0	44.0	740	750	1.50	2.00
	28.5	31.5	45.0	43.0	760	760	1.50	1.50
	29.0	30.0	45.0	43.0	720	700	1.50	1.25
	28.0	31.0	44.0	42.0	760	720	1.50	1.50
	28.0	31.0	45.0	43.0	750	700	1.50	1.25
	28.0	32.0	43.0	44.0	775	740	1.50	1.50
	28.5	31.0	45.0	43.0	750	725	1.50	1.50
	29.0	30.5	44.0	44.0	725	740	1.50	2.00
	28.0	31.0	43.0	44.0	740	730	1.50	1.50
	30.0	30.0	44.0	44.0	730	700	1.50	1.50
	29.0	30.0	43.0	43.0	725	700	1.25	1.50

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Flagstaff vs Parris Island Cos**RC Farms Williams Ranch Gonzales, California****Harvest Date June 21, 2004**

	Flagstaff	Parris	Flagstaff	Parris	Flagstaff	Parris	Flagstaff	Parris
		Is Cos		Is Cos		Is Cos		Is Cos
	Height	Height	Core Dia	Core Dia	Weight	Weight	Core Ht	Core Ht
Count	24	24	24	24	24	24	24	24
Sum	767.5	777.0	1,091.5	1,083.0	18,330.0	17,875.0	50.75	54.75
Mean	31.98	32.38	45.48	45.13	763.75	744.79	2.11	2.28
Maximum Value	33.0	33.5	47.0	46.5	800.0	775.0	2.50	2.50
Minimum Value	31.0	31.0	44.0	43.5	725.0	700.0	1.75	2.00
Variance	0.40	0.35	0.47	0.57	354.89	301.04	0.04	0.04
Std.Dev	0.63	0.59	0.68	0.76	18.84	17.35	0.19	0.20
Joint Variance	*****	0.38	*****	0.52	*****	327.97	*****	0.04
Jt Deg of Freedom	*****	46	*****	46	*****	46	*****	46.00
t-Test Parameter	*****	2.232	*****	1.703	*****	3.626	*****	2.93
Level of Significance	*****	.0305	*****	.0953	*****	.0007	*****	.0053
Confidence Level %	*****	96.946	*****	90.475	*****	99.928	*****	99.47
	Cm's	Cm's	mm	mm	Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	32.0	33.0	46.0	45.0	775	760	2.00	2.50
	32.0	32.0	45.0	44.0	750	740	2.25	2.25
	31.5	32.0	46.0	45.0	760	720	2.00	2.00
	31.0	32.0	46.0	44.5	780	725	2.25	2.25
Solidity measured on a scale of 1 to 5	32.0	33.0	46.0	45.0	800	740	2.00	2.50
	32.5	33.5	45.0	46.0	760	760	1.75	2.00
	31.0	33.5	44.0	46.0	780	775	2.25	2.50
	32.0	32.0	44.5	44.0	760	740	2.00	2.25
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	31.0	32.0	46.0	44.5	750	740	2.50	2.50
	32.0	32.5	46.0	45.0	750	750	2.00	2.25
	33.0	32.0	46.0	45.0	760	740	2.25	2.25
	32.0	33.0	45.0	46.0	750	750	2.00	2.50
	31.5	33.0	46.0	46.0	800	760	2.00	2.50
	33.0	32.5	45.0	45.0	775	740	2.50	2.25
	32.5	31.0	45.0	43.5	760	700	2.50	2.00
	31.0	32.0	46.0	45.0	760	720	2.00	2.00
	32.0	32.0	47.0	45.5	800	740	2.00	2.25
	32.0	32.5	45.0	46.5	725	760	2.25	2.50
	32.0	32.0	45.0	45.0	750	740	2.00	2.00
	33.0	33.0	46.0	46.0	775	750	2.00	2.25
	31.5	32.0	45.0	45.0	760	740	2.00	2.25
	32.0	32.0	45.0	44.5	740	760	2.25	2.50
	32.0	32.0	45.0	45.0	760	750	2.00	2.00
	33.0	32.5	46.0	46.0	750	775	2.00	2.50

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PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Flagstaff vs Darkland Cos**RC Farms Williams Ranch Gonzales, California****Harvest Date June 21, 2004**

	Flagstaff	Darkland	Flagstaff	Darkland	Flagstaff	Darkland	Flagstaff	Darkland
		Cos		Cos		Cos		Cos
	Height	Height	Core Dia	Core Dia	Weight	Weight	Core Ht	Core Ht
Count	24	24	24	24	24	24	24	24
Sum	767.5	750.5	1,091.5	1,103.0	18,330.0	18,685.0	50.75	46.75
Mean	31.98	31.27	45.48	45.96	763.75	778.54	2.11	1.95
Maximum Value	33.0	32.5	47.0	47.5	800.0	825.0	2.50	2.50
Minimum Value	31.0	29.0	44.0	45.0	725.0	750.0	1.75	1.75
Variance	0.40	0.59	0.47	0.54	354.89	696.69	0.04	0.03
Std.Dev	0.63	0.77	0.68	0.74	18.84	26.39	0.19	0.18
Joint Variance	*****	0.49	*****	0.50	*****	525.79	*****	0.04
Jt Deg of Freedom	*****	46	*****	46	*****	46	*****	46.00
t-Test Parameter	*****	3.491	*****	2.337	*****	2.235	*****	3.08
Level of Significance	*****	.0011	*****	.0238	*****	.0303	*****	.0035
Confidence Level %	*****	99.893	*****	97.617	*****	96.966	*****	99.65
	Cm's	Cm's	mm	mm	Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	32.0	31.0	46.0	47.5	775	800	2.00	2.00
	32.0	30.0	45.0	47.0	750	775	2.25	2.00
	31.5	32.0	46.0	46.0	760	800	2.00	1.75
Solidity measured on a scale of 1 to 5	31.0	31.0	46.0	45.0	780	750	2.25	2.00
	32.0	31.0	46.0	46.0	800	750	2.00	1.75
	32.5	31.5	45.0	45.5	760	750	1.75	2.00
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	31.0	31.0	44.0	45.0	780	775	2.25	1.75
	32.0	31.0	44.5	45.0	760	750	2.00	1.75
	31.0	32.5	46.0	46.0	750	750	2.50	2.50
	32.0	32.0	46.0	46.5	750	800	2.00	2.00
	33.0	32.0	46.0	47.0	760	825	2.25	2.00
	32.0	31.5	45.0	46.0	750	775	2.00	1.75
	31.5	29.0	46.0	45.0	800	760	2.00	2.00
	33.0	31.0	45.0	46.0	775	760	2.50	2.00
	32.5	32.0	45.0	46.5	760	800	2.50	2.00
	31.0	31.0	46.0	46.0	760	760	2.00	2.00
	32.0	31.0	47.0	45.5	800	825	2.00	2.25
	32.0	31.5	45.0	47.0	725	800	2.25	2.00
	32.0	31.0	45.0	46.0	750	750	2.00	1.75
	33.0	31.0	46.0	46.0	775	780	2.00	2.00
	31.5	31.0	45.0	45.0	760	775	2.00	2.00
	32.0	32.0	45.0	46.5	740	800	2.25	2.00
	32.0	31.0	45.0	45.0	760	750	2.00	1.75
	33.0	32.5	46.0	46.0	750	825	2.00	1.75

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Flagstaff vs Darkland Cos**Bengard Chualar Ranch Chualar, California****Harvest Date September 09, 2004**

	Flagstaff	Darkland	Flagstaff	Darkland	Flagstaff	Darkland	Flagstaff	Darkland
		Cos		Cos		Cos		Cos
	Height	Height	Core Dia	Core Dia	Weight	Weight	Core Ht	Core Ht
Count	24	24	24	24	24	24	24	24
Sum	749.0	721.0	1,084.0	1,093.5	17,965.0	18,355.0	48.50	43.50
Mean	31.21	30.04	45.17	45.56	748.54	764.79	2.02	1.81
Maximum Value	32.0	31.0	47.0	47.0	775.0	825.0	2.50	2.25
Minimum Value	30.0	29.0	44.0	44.5	720.0	725.0	1.50	1.50
Variance	0.41	0.35	0.49	0.49	246.69	518.43	0.05	0.05
Std.Dev	0.64	0.59	0.70	0.70	15.71	22.77	0.23	0.22
Joint Variance	*****	0.38	*****	0.49	*****	382.56	*****	0.05
Jt Deg of Freedom	*****	46	*****	46	*****	46	*****	46.00
t-Test Parameter	*****	6.568	*****	1.961	*****	2.878	*****	3.16
Level of Significance	*****	.0000	*****	.0559	*****	.0061	*****	.0028
Confidence Level %	*****	100.000	*****	94.406	*****	99.395	*****	99.72
	Cm's	Cm's	mm	mm	Grams	Grams	Inches	Inches
MEASUREMENTS	30.0	29.5	45.0	46.0	740	800	2.00	2.00
FOR	31.0	30.0	44.5	46.0	750	775	2.00	1.75
SAMPLES	32.0	30.5	46.0	45.5	760	725	1.50	1.75
Solidity measured	32.0	30.0	45.5	46.0	775	750	2.00	2.00
on a scale of	31.5	29.5	45.0	44.5	775	760	2.00	1.50
1 to 5	30.0	30.0	45.0	45.0	725	750	2.00	2.00
Note:	31.5	31.0	44.5	46.0	745	775	2.25	1.75
The Level of	32.0	30.0	45.0	45.0	735	750	2.00	2.00
Significance is	31.0	31.0	45.0	46.0	750	750	2.00	2.00
determined by	31.0	30.5	44.0	45.0	760	750	2.00	2.00
using Excel 5's	32.0	30.0	45.5	45.0	775	760	2.25	1.75
2-tail type 2	30.5	30.0	44.5	45.0	725	775	2.00	1.75
built in T-test	31.0	31.0	45.0	47.0	750	825	2.50	1.75
function directly	30.5	30.5	44.5	45.0	745	775	1.75	2.00
over the	32.0	29.0	45.0	45.0	760	750	2.00	2.00
ranges of data.	31.0	29.5	44.5	45.0	740	760	2.00	1.50
	31.0	30.0	45.0	45.0	750	775	2.00	2.00
	30.5	30.0	46.0	46.0	760	775	2.25	1.50
	31.0	29.0	45.0	45.0	750	750	2.00	1.50
	32.0	29.5	47.0	45.0	725	725	1.50	1.50
	31.0	30.0	46.5	46.0	760	775	2.00	2.25
	31.0	31.0	45.0	47.0	740	800	2.50	2.00
	32.0	30.0	46.0	46.0	720	750	2.00	1.75
	31.5	29.5	45.0	46.5	750	775	2.00	1.50

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Flagstaff vs Parris Island Cos**Bengard Chualar Ranch Chualar, California****Harvest Date September 09, 2004**

	Flagstaff	Parris	Flagstaff	Parris	Flagstaff	Parris	Flagstaff	Parris
		Is Cos		Is Cos		Is Cos		Is Cos
	Height	Height	Core Dia	Core Dia	Weight	Weight	Core Ht	Core Ht
Count	24	24	24	24	24	24	24	24
Sum	749.0	768.0	1,084.0	1,075.0	17,965.0	17,425.0	48.50	51.25
Mean	31.21	32.00	45.17	44.79	748.54	726.04	2.02	2.14
Maximum Value	32.0	33.0	47.0	46.0	775.0	760.0	2.50	2.50
Minimum Value	30.0	30.5	44.0	44.0	720.0	700.0	1.50	2.00
Variance	0.41	0.37	0.49	0.24	246.69	382.56	0.05	0.03
Std.Dev	0.64	0.61	0.70	0.49	15.71	19.56	0.23	0.18
Joint Variance	*****	0.39	*****	0.37	*****	314.63	*****	0.04
Jt Deg of Freedom	*****	46	*****	46	*****	46	*****	46.00
t-Test Parameter	*****	4.389	*****	2.150	*****	4.394	*****	1.91
Level of Significance	*****	.0001	*****	.0368	*****	.0001	*****	.0624
Confidence Level %	*****	99.993	*****	96.316	*****	99.994	*****	93.76
	Cm's	Cm's	mm	mm	Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	30.0	31.0	45.0	45.0	740	760	2.00	2.50
	31.0	30.5	44.5	45.5	750	725	2.00	2.25
	32.0	31.5	46.0	45.0	760	700	1.50	2.00
Solidity measured on a scale of 1 to 5	32.0	32.5	45.5	45.0	775	725	2.00	2.00
	31.5	32.0	45.0	45.0	775	740	2.00	2.00
	30.0	31.5	45.0	44.5	725	700	2.00	2.00
	31.5	32.0	44.5	45.0	745	725	2.25	2.25
	32.0	32.5	45.0	44.0	735	700	2.00	2.00
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	31.0	32.0	45.0	45.0	750	720	2.00	2.50
	31.0	32.0	44.0	44.5	760	720	2.00	2.00
	32.0	33.0	45.5	44.0	775	700	2.25	2.00
	30.5	32.5	44.5	45.0	725	720	2.00	2.25
	31.0	32.0	45.0	44.5	750	740	2.50	2.25
	30.5	31.5	44.5	46.0	745	750	1.75	2.50
	32.0	32.0	45.0	45.0	760	740	2.00	2.00
	31.0	33.0	44.5	45.0	740	760	2.00	2.00
	31.0	32.5	45.0	45.0	750	725	2.00	2.25
	30.5	31.5	46.0	44.5	760	725	2.25	2.00
	31.0	32.0	45.0	44.0	750	700	2.00	2.00
	32.0	31.5	47.0	44.5	725	700	1.50	2.00
	31.0	32.0	46.5	44.0	760	725	2.00	2.25
	31.0	32.0	45.0	45.0	740	750	2.50	2.00
	32.0	33.0	46.0	45.0	720	750	2.00	2.25
	31.5	32.0	45.0	45.0	750	725	2.00	2.00

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Flagstaff vs Parris Island Cos**Jefferson Farms, Home Ranch Salinas, California Harvest Date September 24, 2004**

	Flagstaff	Parris	Flagstaff	Parris	Flagstaff	Parris	Flagstaff	Parris
		Is Cos		Is Cos		Is Cos		Is Cos
	Height	Height	Core Dia	Core Dia	Weight	Weight	Core Ht	Core Ht
Count	24	24	24	24	24	24	24	24
Sum	796.0	813.0	1,127.0	1,105.0	18,165.0	17,760.0	48.75	53.00
Mean	33.17	33.88	46.96	46.04	756.88	740.00	2.03	2.21
Maximum Value	35.0	36.5	49.0	48.0	825.0	800.0	2.50	2.75
Minimum Value	31.5	32.0	46.0	44.0	720.0	675.0	1.75	1.50
Variance	0.97	1.98	0.91	1.09	645.24	1,150.00	0.04	0.07
Std.Dev	0.99	1.41	0.95	1.04	25.40	33.91	0.20	0.26
Joint Variance	*****	1.48	*****	1.00	*****	897.62	*****	0.05
Jt Deg of Freedom	*****	46	*****	46	*****	46	*****	46.00
t-Test Parameter	*****	2.019	*****	3.178	*****	1.951	*****	2.63
Level of Significance	*****	.0494	*****	.0026	*****	.0571	*****	.0115
Confidence Level %	*****	95.064	*****	99.735	*****	94.285	*****	98.85
	Cm's	Cm's	mm	mm	Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	33.5	32.5	48.0	47.0	775	775	2.00	2.25
	32.5	33.0	46.0	46.0	750	675	2.00	2.00
	32.5	32.5	47.0	46.0	780	725	2.25	2.50
	32.0	33.5	46.0	45.0	760	700	2.00	2.00
Solidity measured on a scale of 1 to 5	34.0	36.0	46.0	46.0	825	725	2.50	2.75
	34.0	32.5	47.0	44.0	750	675	2.00	2.50
	33.5	34.0	46.0	46.0	725	750	2.25	2.25
	34.0	36.5	48.0	48.0	750	800	2.25	2.50
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	32.5	36.5	48.0	46.0	760	750	2.00	2.00
	32.5	33.0	46.0	46.0	750	750	1.75	2.00
	31.5	32.5	46.0	46.0	775	750	2.00	2.00
	32.5	36.0	48.0	48.0	800	800	2.50	2.50
	33.5	36.5	46.0	44.0	750	700	2.00	2.00
	31.5	34.0	47.0	46.0	760	725	2.00	2.25
	32.0	34.0	47.0	45.0	725	760	2.00	2.25
	34.0	33.5	47.0	48.0	725	775	2.00	2.25
	34.0	33.5	49.0	46.0	750	750	1.75	2.00
	33.5	34.0	46.0	46.0	760	725	2.00	2.25
	34.0	34.0	48.0	46.0	780	750	2.00	2.25
	35.0	34.0	46.0	46.0	780	750	2.00	2.25
	35.0	33.5	47.0	47.0	740	775	1.75	2.50
	32.5	33.0	48.0	46.0	750	750	1.75	2.00
	33.0	32.0	46.0	45.0	720	700	2.00	1.50
	33.0	32.5	48.0	46.0	725	725	2.00	2.25

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Flagstaff vs Darkland Cos

Hayes Ranch, Pajaro, California

Harvest Date October 08, 2004

	Flagstaff	Darkland	Flagstaff	Darkland	Flagstaff	Darkland	Flagstaff	Darkland
		Cos		Cos		Cos		Cos
	Height	Height	Core Dia	Core Dia	Weight	Weight	Core Ht	Core Ht
Count	24	24	24	24	24	24	24	24
Sum	768.5	709.0	1,106.0	1,129.0	17,915.0	18,550.0	44.50	41.25
Mean	32.02	29.54	46.08	47.04	746.46	772.92	1.85	1.72
Maximum Value	33.0	31.0	48.0	48.5	800.0	850.0	2.25	2.25
Minimum Value	31.0	28.0	44.0	46.0	700.0	700.0	1.50	1.50
Variance	0.31	0.59	0.80	0.50	907.56	1,517.21	0.04	0.06
Std.Dev	0.56	0.76	0.89	0.71	30.13	38.95	0.19	0.25
Joint Variance	*****	0.45	*****	0.65	*****	1,212.39	*****	0.05
Jt Deg of Freedom	*****	46	*****	46	*****	46	*****	46.00
t-Test Parameter	*****	12.803	*****	4.125	*****	2.632	*****	2.11
Level of Significance	*****	.0000	*****	.0002	*****	.0115	*****	.0405
Confidence Level %	*****	100.000	*****	99.985	*****	98.849	*****	95.95
	Cm's	Cm's	mm	mm	Grams	Grams	Inches	Inches
MEASUREMENTS	32.0	30.0	46.0	47.0	775	800	2.00	1.75
FOR	32.0	31.0	46.0	46.5	750	825	2.00	2.00
SAMPLES	33.0	29.0	47.0	47.0	780	775	1.75	1.50
	31.5	29.5	45.0	46.5	740	750	1.75	1.75
Solidity measured	32.0	28.0	46.0	46.0	775	700	1.75	1.50
on a scale of	31.0	30.0	47.0	48.0	760	825	2.00	2.00
1 to 5	32.0	29.0	47.0	47.0	700	775	2.25	1.50
	31.0	29.5	46.0	47.0	740	700	2.00	1.50
Note:	32.0	28.0	46.0	46.5	725	750	2.00	1.50
The Level of	32.0	30.0	45.5	48.0	700	825	1.75	2.00
Significance is	33.0	29.0	45.0	47.0	725	750	2.00	1.75
determined by	31.5	30.0	46.0	48.0	700	800	1.50	1.50
using Excel 5's	32.0	29.5	45.0	47.0	725	750	1.75	1.50
2-tail type 2	31.5	30.0	47.0	46.5	760	800	1.50	2.00
built in T-test	33.0	31.0	46.0	48.0	720	850	1.75	2.00
function directly	32.0	29.5	45.0	46.0	780	750	2.00	1.50
over the	32.0	30.0	46.0	48.5	720	800	1.50	2.00
ranges of data.	32.0	30.0	46.0	48.0	760	775	1.75	1.75
	32.5	29.0	46.0	47.0	780	750	2.00	1.50
	33.0	29.5	47.0	47.0	780	750	2.00	1.50
	32.0	30.0	46.5	47.0	725	775	1.75	2.25
	31.5	30.0	47.0	47.0	775	800	1.75	2.00
	32.0	29.0	44.0	46.0	720	750	2.00	1.50
	32.0	28.5	48.0	46.5	800	725	2.00	1.50

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Parris Island Cos vs Flagstaff**Hayes Ranch, Pajaro, California****Harvest Date October 08, 2004**

	Parris Is Cos	Flagstaff	Parris Is Cos	Flagstaff	Parris Is Cos	Flagstaff	Parris Is Cos	Flagstaff
	Height	Height	Core Dia	Core Dia	Weight	Weight	Core Ht	Core Ht
Count	24	24	24	24	24	24	24	24
Sum	794.5	768.5	1,066.0	1,106.0	16,360.0	17,915.0	50.00	44.50
Mean	33.10	32.02	44.42	46.08	681.67	746.46	2.08	1.85
Maximum Value	34.0	33.0	46.0	48.0	800.0	800.0	2.50	2.25
Minimum Value	32.0	31.0	41.0	44.0	550.0	700.0	1.50	1.50
Variance	0.37	0.31	1.56	0.80	6,836.23	907.56	0.07	0.04
Std.Dev	0.61	0.56	1.25	0.89	82.68	30.13	0.27	0.19
Joint Variance	*****	0.34	*****	1.18	*****	3,871.90	*****	0.06
Jt Deg of Freedom	*****	46	*****	46	*****	46	*****	46.00
t-Test Parameter	*****	6.418	*****	5.320	*****	3.607	*****	3.36
Level of Significance	*****	.0000	*****	.0000	*****	.0008	*****	.0016
Confidence Level %	*****	100.000	*****	100.000	*****	99.924	*****	99.84
	Cm's	Cm's	mm	mm	Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	33.0	32.0	45.0	46.0	775	775	2.25	2.00
	33.5	32.0	46.0	46.0	800	750	2.25	2.00
	34.0	33.0	45.0	47.0	750	780	2.50	1.75
Solidity measured on a scale of 1 to 5	33.0	31.5	41.0	45.0	560	740	1.75	1.75
	32.0	32.0	43.0	46.0	600	775	2.00	1.75
	33.0	31.0	46.0	47.0	740	760	2.00	2.00
	34.0	32.0	45.0	47.0	600	700	2.00	2.25
	33.0	31.0	45.0	46.0	800	740	2.25	2.00
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	33.5	32.0	45.0	46.0	720	725	2.00	2.00
	33.0	32.0	44.0	45.5	600	700	1.75	1.75
	33.0	33.0	45.0	45.0	750	725	2.00	2.00
	32.0	31.5	42.0	46.0	600	700	2.25	1.50
	34.0	32.0	44.0	45.0	720	725	2.00	1.75
	33.0	31.5	45.0	47.0	550	760	1.75	1.50
	33.0	33.0	45.0	46.0	560	720	1.50	1.75
	34.0	32.0	43.0	45.0	600	780	1.75	2.00
	33.0	32.0	45.0	46.0	650	720	2.00	1.50
	33.0	32.0	43.0	46.0	720	760	2.50	1.75
	34.0	32.5	44.0	46.0	800	780	2.50	2.00
	33.0	33.0	45.0	47.0	720	780	2.50	2.00
	32.0	32.0	45.0	46.5	725	725	2.00	1.75
	32.5	31.5	46.0	47.0	675	775	2.25	1.75
	33.0	32.0	44.0	44.0	625	720	2.00	2.00
	33.0	32.0	45.0	48.0	720	800	2.25	2.00

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Parris Island Cos vs Darkland Cos

Hayes Ranch, Pajaro, California

Harvest Date October 08, 2004

	Parris Is Cos	Darkland Cos	Parris Is Cos	Darkland Cos	Parris Is Cos	Darkland Cos	Parris Is Cos	Darkland Cos
	Height	Height	Core Dia	Core Dia	Weight	Weight	Core Ht	Core Ht
Count	24	24	24	24	24	24	24	24
Sum	794.5	709.0	1,066.0	1,129.0	16,360.0	18,550.0	50.00	41.25
Mean	33.10	29.54	44.42	47.04	681.67	772.92	2.08	1.72
Maximum Value	34.0	31.0	46.0	48.5	800.0	850.0	2.50	2.25
Minimum Value	32.0	28.0	41.0	46.0	550.0	700.0	1.50	1.50
Variance	0.37	0.59	1.56	0.50	6,836.23	1,517.21	0.07	0.06
Std.Dev	0.61	0.76	1.25	0.71	82.68	38.95	0.27	0.25
Joint Variance	*****	0.48	*****	1.03	*****	4,176.72	*****	0.07
Jt Deg of Freedom	*****	46	*****	46	*****	46	*****	46.00
t-Test Parameter	*****	17.866	*****	8.968	*****	4.891	*****	4.85
Level of Significance	*****	.0000	*****	.0000	*****	.0000	*****	.0000
Confidence Level %	*****	100.000	*****	100.000	*****	99.999	*****	100.00
	Cm's	Cm's	mm	mm	Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	33.0	30.0	45.0	47.0	775	800	2.25	1.75
	33.5	31.0	46.0	46.5	800	825	2.25	2.00
	34.0	29.0	45.0	47.0	750	775	2.50	1.50
Solidity measured on a scale of 1 to 5	33.0	29.5	41.0	46.5	560	750	1.75	1.75
	32.0	28.0	43.0	46.0	600	700	2.00	1.50
	33.0	30.0	46.0	48.0	740	825	2.00	2.00
	34.0	29.0	45.0	47.0	600	775	2.00	1.50
	33.0	29.5	45.0	47.0	800	700	2.25	1.50
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	33.5	28.0	45.0	46.5	720	750	2.00	1.50
	33.0	30.0	44.0	48.0	600	825	1.75	2.00
	33.0	29.0	45.0	47.0	750	750	2.00	1.75
	32.0	30.0	42.0	48.0	600	800	2.25	1.50
	34.0	29.5	44.0	47.0	720	750	2.00	1.50
	33.0	30.0	45.0	46.5	550	800	1.75	2.00
	33.0	31.0	45.0	48.0	560	850	1.50	2.00
	34.0	29.5	43.0	46.0	600	750	1.75	1.50
	33.0	30.0	45.0	48.5	650	800	2.00	2.00
	33.0	30.0	43.0	48.0	720	775	2.50	1.75
	34.0	29.0	44.0	47.0	800	750	2.50	1.50
	33.0	29.5	45.0	47.0	720	750	2.50	1.50
	32.0	30.0	45.0	47.0	725	775	2.00	2.25
	32.5	30.0	46.0	47.0	675	800	2.25	2.00
	33.0	29.0	44.0	46.0	625	750	2.00	1.50
	33.0	28.5	45.0	46.5	720	725	2.25	1.50

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) Paragon Seed, Inc.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER Exp. 5911	3. VARIETY NAME Flagstaff
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) P.O. Box 1906 Salinas, California 93902-1906	5. TELEPHONE (include area code) 831-753-2100	6. FAX (include area code) 831-753-1470
7. PVPO NUMBER 200500090		

8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain. ☒ YES ☐ NO9. Is the applicant (individual or company) a U.S. national or U.S. based company?
If no, give name of country ☒ YES ☐ NO10. Is the applicant the original owner? ☒ YES ☐ NO If no, please answer one of the following:

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

☐ YES ☐ NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (if needed, use reverse for extra space):

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call 1-800-245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.